REMARKS

Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

A. Claim Status

Claims 1-2, 4-6, 8-9, 11-12, 14-15, 17, and 19-20 are pending and were rejected. Specifically, claims 1-2, 4-6, 8-9, 11-12, 14-15, 17, and 19-20 were rejected pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,566,807 to Fujita, et al. (hereinafter "Fujita") in view of U.S. Patent No.6,376,694 to Uchida, et al. ("Uchida"). [12/24/08 Office Action, p. 2, ¶ 5].

B. Claims 1-2, 4-6, 8-9, 11-12, 14-15, 17 and 19-20 are Patentable over Fujita in view of Uchida

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 1-2, 4-6, 8-9, 11-12, 14-15, 17 and 19-20 as allegedly being unpatentable over Fujita in view of Uchida. As set forth in detail below, Fujita and Uchida, whether alone or in combination, do not teach, disclose, or suggest that the first organic compound is a silole derivative with $\geq 1\%$ and $\leq 50\%$ by weight of the total weight of the electron transport layer. In view of the following remarks, Applicants kindly request that the Examiner reconsider and withdraw the obviousness rejection.

Applicants' pending claim 1 recites:

> 1. An organic electroluminescent device comprising a pair of electrodes and a plurality of organic compound layers, which include an electron transport layer, provided between the pair of electrodes,
>
> the electron transport layer including at least a first organic compound and a second organic compound, wherein
>
> the first organic compound possesses a higher electron mobility than the second organic compound; and

> the second organic compound possesses a higher glass transition temperature than the first organic compound,
>
> wherein the first organic compound is a silole derivative and is from 1% or more to 50% or less by weight of the total weight of the electron transport layer.

In response to Applicants' September 24, 2008 reply, the Office Action contends that:

> With regard to the arguments concerning the weight percentage limitation of the first organic compound in the electron transport layer, Fujita gives at least 6 specific examples (Comparative Examples 10-12 and Examples 22-24) of electron transport layers that comprise a first organic material and a second organic material. [12/24/08 Office Action, p. 7, ¶ 24].

In the Examples cited by the Office Action (Examples 10-12 and 22-24), Fujita's electron transporting layer was formed using Alq_3 deposited at a rate of 0.4 nm/s along with another material which, in the cited Examples, is deposited at a growth rate of 0.004, 0.02, 0.04, or 0.08 nm/s. The additional materials cited by Fujita in these Examples include triphenylamine (hereinafter "TPA"), perylene, and N, N'-di-(4-methyl-phenyl)-N, N'-diphenyl-1, 4-phenylene-diamine (hereinafter "MPPD"). The Office Action further contends that:

> Fujita describes at least different deposition rate ratios for the two materials, which together with the mass of each material, determines the resulting weight ratio of the two materials in the resulting layer. This disclosure anticipates the weight ratio limitation in amended claims 1 and 2. [12/24/08 Office Action, p. 7, ¶ 24].

Applicant's claim 1 recites, *inter alia*, an "electron transport layer including at least a first organic compound and a second organic compound," wherein the "first organic compound is a silole derivative and is from 1% or more to 50% or less by weight of the total weight of the electron transport layer." Within the specification, p. 9, lns. 18-22 explain that the "second organic compound is preferably a metal complex; .... Examples of a preferable metal complex include Alq_3, BAlq, and a quinolinolate metal complex ..." Thus, an interpretation of claim 1 in

light of the specification indicates that the use of Alq_3 in Fujita's electron transporting layer could be associated with a "second organic compound." In that regard, TPA, perylene, and MPPD would be considered a "first organic compound." However, as acknowledged by the Office Action [12/24/08 Office Action, p. 3, ¶ 7], TPA, perylene, and MPPD are not silole derivatives and, hence, do not satisfy the element of claim 1 wherein the first organic compound is a silole derivative which is $\geq 1\%$ and $\leq 50\%$ by weight of the total weight of the electron transport layer.

In attempting to remedy this deficiency, the Office Action repeats its contention that:

> Uchida states, in the section relied upon and cited in the rejection that incorporates Uchida, that "[t]he silole derivative of the present invention can be widely applied... to electrically functional materials," such as electron transport layers. Further, Uchida states that "an electron transporting material, etc. can be added to the silole derivative layer" (Uchida, col. 7, lines 10-26). [12/24/08 Office Action, pp. 7-8, ¶ 25].

In the quoted passage, Uchida is merely stating that silole derivatives may be applied to electrically functional materials, but provides no teaching, suggestion, or motivation for using a silole derivative in an electron transport layer with a concentration of $\geq 1\%$ and $\leq 50\%$ by weight of the total weight of the electron transport layer in combination with a second organic compound which has a lower electron mobility and a higher glass transition temperature as required by claim 1.

Applicants respectfully submit that the mere fact that references can be combined does not necessarily render the resultant combination obvious. Furthermore, it has been established that it is insufficient to simply state that it would have been obvious to combine the references without an objective reason to do so. [MPEP 2143.01, Sections III-IV]. Applicants respectfully submit that the Office Action has not explicitly provided an incentive to replace TPA, perylene,

or MPPD in Fujita's Examples 10-12 and 22-24 with a silole derivative in the same concentrations as specified in the Examples. As shown, for example, in Table 1 on p. 20 of the specification, an organic electroluminescence (EL) device having an electron transport layer with a first organic compound which is a silole derivative in a concentration of $\geq 1\%$ and $\leq 50\%$ by weight exhibits improved power and current efficiency.

The range recited in claim 1 is critical since organic EL devices outside of this range exhibit lower power and current efficiency. Thus, this range is critical to achieving improved performance of the device. A review of the prior art reveals that Fujita and Uchida do not recognize the unexpected results obtained over the recited concentration range and, hence, do not realize the criticality of the range. It has been demonstrated that obviousness is not established when it has been shown that the recited range is critical. [MPEP 2144.05, Section III]. In view of the above considerations and since the TPA, perylene, or MPPD compounds disclosed in Fujita are not equivalent to Uchida's silole derivate, Applicants respectfully submit that it would not have been obvious to combine Fujita and Uchida to obtain Applicants' organic EL device.

Accordingly, Fujita and Uchida – whether alone or in combination – fail to teach, disclose, or suggest an organic EL device comprising a "electron transport layer including at least a first organic compound and a second organic compound, wherein ... the first organic compound is a silole derivative and is from 1% or more to 50% or less by weight of the total weight of the electron transport layer" as recited in Applicants' pending claim 1. Applicants respectfully submit that claim 1 is patentably distinct from Fujita and Uchida for at least this reason.

Since independent claim 2 is directed to an organic EL device comprising this same patentable element it is deemed to be allowable for at least similar reasons. Dependent

claims 4-6, 8-9, 11-12, 14-15, 17 and 19-20, which depend either directly or indirectly from claim 1 or 2, are asserted to be in condition for allowance for at least similar reasons. Withdrawal of the Section 103 rejection is therefore respectfully requested. Applicants respectfully submit that all of the pending claims are now allowable and early, favorable action in that regard is requested.

Applicants have chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Furthermore, Applicants have not specifically addressed the rejections of the dependent claims. Applicants respectfully submit that the independent claims from which they depend are in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicants, however, reserve the right to address such rejections of the dependent claims in the future as appropriate.

CONCLUSION

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 50-4827, ORDER NO. 5000-5263.

Respectfully submitted,
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